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ABSTRACT

The mental health needs of disaster victims remains a largely neglected area, possibly due to other pressing demands placed on available resources and to the difficulties in correctly detecting psychiatric cases by the general health worker. This study attempted to use a questionnaire suitable to primary care settings for the detection of probable psychiatric morbidity among 177 adult survivors of the disaster that destroyed the town of Armero, Colombia in November, 1985. The sample was initially screened with the Self-Reporting Questionnaire. A subgroup of 104 persons was subsequently interviewed by clinical psychiatrists to assess the specific nature of the psychiatric problems and to produce Diagnostic and Statistical Manual of Mental Disorders (DSM-III) diagnoses. The results of the screening and the psychiatric interviews were compared to evaluate the sensitivity, specificity, and predictive validity of the instrument. The results indicated that the instrument was highly sensitive (.87) and predictive of a positive result (.81), with a slightly lower score on specificity (.67). Incorporating this instrument in the training of the primary care worker for the detection of psychiatric morbidity among disaster victims could prove useful. (Author/NB)

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MENTAL HEALTH PROBLEMS OF DISASTER VICTIMS

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ABSTRACT

The mental health needs of disaster victims remain a largely neglected area, possibly due to other pressing demands placed on the available resources and to the difficulties in correctly detecting psychiatric cases by the general health worker. The authors report on an attempt to use a questionnaire suitable to primary care settings for the detection of probable psychiatric morbidity. The sample consisted of 177 adult survivors of the disaster that destroyed the town of Armero, Colombia, in November, 1985. The sample was initially screened with the Self-Reporting Questionnaire. A subgroup of 104 was subsequently interviewed by clinical psychiatrists to assess the specific nature of the psychiatric problems and to produce DSM-III diagnoses. The results of the screening and the psychiatric interviews were compared to evaluate the sensitivity, specificity and predictive value of the instrument. The results indicate the instrument is highly sensitive (.87) and predictive of a positive result (.81), with a slightly lower score on specificity (.67). The need for, and advantages of, incorporating this instrument in the training of the primary care worker for the detection of psychiatric morbidity among disaster victims are discussed.

I. INTRODUCTION

Primary care has been accepted as the main strategy for attaining the WHO goal of "health for all by the year 2,000" (33), and mental health care has been identified as one of its essential components (26), particularly in developing countries (4, 32). In these nations, disasters are relatively common occurrences (30), bringing a variety of health problems to victims, families and communities, not only in their immediate aftermath, but in the medium- and long-term range as well (1, 5, 9, 14, 25, 29). Disaster victims, as a group at high-risk for presenting psychological problems (15), should constitute a priority for primary mental health care (34), but no systematic attention has been paid to the development, implementation and evaluation of the primary care worker's role in providing mental health care to victims of disasters in developing countries (17).

This neglect may be due to the perceived difficulties in training the primary care worker in the detection and management of the victims' emotional problems. To address these issues, the authors have evolved a long-range plan to ascertain the magnitude of emotional disorders of victims and to effectively train health workers in the identification and management of these problems. The various stages of the project include (i) ascertaining the prevalence of emotional disorders among disaster victims in the community and in primary health care clinics; (ii) designing appropriate instruments for the screening of victims with emotional disorders; (iii) developing training material for the

primary care worker in disaster mental health; and (iv) evaluating selected outcomes of the training program, such as improvement in the primary care workers' knowledge of disaster mental health and in their skills in identifying and managing victims with psychiatric problems, and improvement in the clinical status of the victims. The successful completion of the project should encourage the adoption of national health policies that promote the role of the primary care worker in the delivery of mental health care to victims of disasters, particularly in developing countries.

The first objective of the project was addressed by the survey the authors conducted of adult survivors of the volcanic eruption which destroyed the small town of Armero, Colombia, in 1985 (28). The preliminary results of this investigation have been reported elsewhere (18). They highlight that the frequency of emotional distress identified by the instrument seven months after the tragedy was very high (55%), and that certain personal background variables of the victims, such as living alone, and certain environmental conditions subsequent to the disaster, such as unemployment, were significantly related to being a probable psychiatric case.

The instrument used for the screening of emotional distress among adult victims was the Self-Reporting Questionnaire (SRQ) which identifies individuals with emotional problems (12). Similar to other screening instruments, the SRQ indicates that an individual who scores positively is "likely to be a case". The

specific nature of the disorder cannot be determined, the final criteria for caseness resting on the psychiatric examination performed by a well-trained clinician. The SRQ is a simple instrument that has been extensively used in various developing countries in routine clinical situations (8), but it had never been used with disaster victims. Since the use of the SRQ under ordinary conditions with patients in primary care clinics and with subjects in community-based surveys had shown it to be a reliable and valid screening instrument (21, 22), it was felt to be very important to further investigate its properties with the particular population of disaster victims. If the instrument's behavior proves adequate, it will represent an invaluable method for the screening of adult victims and for the identification of diagnosable cases of emotional distress, which would permit the primary care worker to concentrate his/her efforts on these individuals. The present paper addresses the issues related to the validity of this short instrument in identifying psychiatric morbidity among disaster victims.

II. METHODS

The study is a part of a two stage screening of adult survivors of the Armero disaster which consisted of an initial screening for emotional distress using the SRQ and a subsequent clinical interview of a subsample by a psychiatrist to validate the instrument.

The original SRQ consists of a 20-item neurotic subscale and a 4-item psychotic subscale. The definition of "probable case"

according to the score on the SRQ was based on the following criteria: a score of 8 or more points in the neurotic subscale; or a score of 1 or more points in the psychotic subscale. The total number of individuals in the sample was 177. Of these, 90 subjects had a positive SRQ score, and 87 had a negative SRQ score. An attempt was made to interview all subjects with a positive SRQ score and about one third of those with a negative SRQ score. Seventy of the positives and 34 of the negatives were eventually interviewed by the research psychiatrists. This subsample of 104 subjects interviewed was not randomly selected. Individuals not interviewed were mostly those who had moved out of the area, and only two subjects refused the interview.

The interviewers (n=9) were faculty of the Department of Psychiatry and psychiatric residents of the University Javeriana. They were all experienced clinicians, who had been working in the area at the time of the tragedy. They were familiar with issues of disaster mental health and had been given additional training in this specific area.

The psychiatric interview schedule was developed taking into consideration various issues, such as the specific disaster circumstances, the training of the clinicians, and the need to produce generalizable results. This interview schedule was adjusted to the specific disaster situation, and gathered information on socio-demographic data, family and personal history, pre-morbid personality, previous psychiatric disorders, past and current medical disorders, health and mental health care

received, disaster experience, current emotional problems, and mental status examination. Upon completion of the interview, the psychiatrists entered their clinical diagnosis.

To ensure standardization of the results and the generalizability of the findings, however, a symptom checklist (13) was appended to the interview schedule to generate DSM-III diagnoses (2), and the clinicians were asked to complete it after the clinical diagnosis had been recorded. The symptoms checked by the psychiatrist were reviewed by an independent rater who was familiar with DSM-III to produce DSM-III diagnoses for each individual case.

Selected variables of the victims who were interviewed and not interviewed within each group of SRQ scores were compared to ascertain the possible impact of differences in these background variables on the eventual psychiatric diagnosis. The diagnoses produced by the clinicians and by DSM-III criteria were analyzed, and criteria for the establishment of confirmed cases were defined. Finally, a comparison of confirmed psychiatric cases with the SRQ score grouping was carried out to ascertain the properties of the instrument in correctly identifying victims with psychiatric problems.

III. RESULTS

The sociodemographic characteristics of the sample (table 1) show a slightly greater proportion of females (52%), two thirds of the subjects being under age 45. Slightly over half of the sample had elementary education, but one third were illiterate.

About half were married or had a common-law marriage. Eighty percent had no current occupation. All subjects were of a mixed racial composition.

When the neurotic subscales of subjects from the SRQ positive and the SRQ negative groups were compared, there was a very significant difference in the mean SRQ scores. The mean score of the neurotic subscale for the subjects with a negative SRQ (3.31 ± 2.07) was less than a third of the mean score for all the subjects with a positive SRQ (11.19 ± 3.50).

An initial comparison between the interviewed and non-interviewed groups was carried out (Table 2) to see whether they differed significantly in the distribution of those variables which had been significantly associated with a higher risk for experiencing emotional distress as defined by a positive SRQ score. Among the SRQ positives, no significant differences were found between the interviewed and non-interviewed group in any of the selected variables, which include mean SRQ score, for the neurotic and psychotic subscales, age, sex, education, marital status, current occupation, presenting physical problems, feeling that people had been of help, and knowing the date for leaving the temporary camp. Among the SRQ negatives, however, significant differences between the interviewed and non-interviewed groups were noted, with a higher proportion of women and unemployed victims being in the interviewed group. Also, the mean SRQ scores for these two sub-groups differed significantly,

with a higher mean of the neurotic subscale being present in the interviewed group.

For the study of the validity of the SRQ, three criteria for psychiatric caseness were developed, with varying degrees of stringency:

Criterion 1: The subject had at least one psychiatric diagnosis given by the clinician, and subsequently confirmed by DSM-III criteria.

Criterion 2: The subject had at least one psychiatric diagnosis given by the clinician which may or may not have been confirmed by DSM-III criteria.

Criterion 3: The subject had at least one psychiatric diagnosis as per DSM-III, which may or may not have been diagnosed by the clinician.

These criteria are not mutually exclusive, and each has its advantages and disadvantages. Criterion 1, which is the most stringent in defining a case, may be able to include cases which would be definitely diagnosable, but may miss those cases that do not fully meet DSM-III criteria. Given the questionable applicability of DSM-III in Latin American (3), culturally-defined cases could be missed, inflating the false-negative rate and depriving potential patients of needed services. Criterion 2, on the other hand, includes all the cases that would receive a clinical diagnosis made by a psychiatrist who shares the subjects' cultural background, though the diagnosis may not meet the more stringent DSM-III criteria for caseness. It relies on

clinical criteria which may be perceived as being idiosyncratic, producing diagnoses which are based on information collected in a somewhat non-reproducible manner. It may tend to diagnose more false positives, thereby inflating the prevalence rate and inappropriately increasing the demand for mental health services. Criterion 3 may be the most standardized and replicable method for defining a case. However, in the present study it may tend to exclude cases for which the DSM-III checklist did not include the diagnostic category or to ignore the cultural variations of psychopathology.

The diagnostic distribution for both SRQ positives and negatives is given on Table 3 according to the three criteria defined above. It should be noted that most subjects received more than one diagnosis, made either by the clinician or by DSM-III. Among the SRQ positives, the most frequent diagnosis by any criteria was post-traumatic stress disorder, followed by major depression, generalized anxiety disorder, alcohol abuse and phobias. All other diagnoses were sporadic. Among the SRQ negatives, a similar diagnostic distribution was seen, with post-traumatic stress disorder and major depression being the most frequent ones.

The analysis of the validity of the SRQ compared to the criteria for caseness (Table 4) indicate that the sensitivity and the positive predictive value of the SRQ is consistently high irrespective of which criterion for defining a case is used. The

lowest false-negative rate is seen when the clinician diagnosis is used as the validating criteria.

IV. CONCLUSIONS

The findings of this investigation indicate a high validity of the SRQ for the screening of emotional problems among adult victims of this particular disaster. The overall prevalence rate of psychopathology identified in our study may not be generalizable to other types of disasters, as the impact of each disaster on the affected population may differ in its intensity. However, the consistency of the detection of psychopathology using the SRQ may not be affected to a great extent, and the instrument is likely to prove a valuable aid in the identification and management of disaster victims whose emotional problems are clinically relevant.

The most frequent disorders identified among the Armero victims by the psychiatric interview were post-traumatic stress disorder, major depression and generalized anxiety disorder. While it can be questioned whether these disorders will also be the most frequent among victims of other disasters, previous studies have shown that anxiety and depression are the predominant features of disaster psychopathology (6, 10, 19, 20, 23, 27, 31). Hence, our findings indicate that, given the time pressures and the limited resources in a post-disaster period, the training of the primary care worker in delivering mental health services for disaster victims should focus on the identification and management of the most frequent conditions.

It should not focus on all the disorders which are commonly encountered in routine clinical practice, such as acute and chronic psychoses, organic mental syndromes, mental retardation, epilepsy, and the chronic complainer (7, 11, 16, 29).

The findings from the Armero project therefore indicate that among victims of major disasters in a developing country, psychiatric disorders are frequent and clinically significant, and can be readily identified by a simple screening instrument. The next investigative step is to develop, implement and evaluate adequate strategies for the focused training of the primary care worker local to the disaster area in the management of the most relevant psychiatric disorders seen among victims, for which this study provides initial guidelines.

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TABLE 1

DISTRIBUTION OF SELECTED SOCIO-DEMOGRAPHIC CHARACTERISTICS OF THE ARMERO VICTIMS (N=177)

		N	%
SEX:	Males	84	48
	Females	93	52
AGE:	18-44	121	68
	45-64	40	23
	65+	16	9
EDUCATION (YEARS)	NONE	55	31
	1-5	95	54
	6+	27	15
MARITAL STATUS	SINGLE	35	20
	MARRIED	25	14
	COMMON-LAW	76	43
	SEPARATED	15	9
	WIDOW	26	14
CURRENT OCCUPATION	NONE	110	79
	ANY	66	21

Table 2

SELECTED CHARACTERISTIC OF ARMERO VICTIMS (N=177)
BY RESULTS OF THE SRQ* AND BY INTERVIEW STATUS

		SELF REPORTING QUESTIONNAIRE					
		NEGATIVE (N=87)			POSITIVE (N=90)		
		INTERVIEWED (N=34)	NOT-INTERVIEWED (N=53)	P	INTERVIEWED (N=70)	NOT-INTERVIEWED (N=20)	P
MEAN SRQ SCORE							
Neurotic Subscale		4.03 ± 2.01	2.85 ± 1.98	.008	11.41 ± 3.57	10.40 ± 3.20	N.S.
Psychotic Subscale		---	---		.77 ± .95	.65 ± .67	N.S.
AGE	18-44	70.6	79.2		58.6	70.0	
(YEARS)	45-64	20.6	17.0	N.S.	27.1	25.0	N.S.
	65+	8.8	3.8		14.3	5.0	
SEX	MALE	32.4	64.2	.004	38.6	60.0	N.S.
	FEMALE	67.6	35.8		61.4	40.0	
EDUCATION	NONE	32.4	22.6		40.0	20.0	
(YEARS)	1-5	52.9	54.7	N.S.	48.6	70.0	N.S.
	6+	14.7	22.6		11.4	10.0	
MARITAL	SINGLE	8.8	20.8		20.0	35.0	
STATE	MARRIED	8.8	17.0		15.7	10.0	
	COMMON-LAW	50.0	45.3	N.S.	40.0	35.0	N.S.
	DIVORCED	11.8	3.8		11.4	5.0	
	WIDOW	20.6	13.2		12.9	15.0	
CURRENT	NONE	73.5	34.0	.001	75.7	70.0	N.S.
OCCUPATION	SOME	26.5	64.2		24.3	30.0	
PHYSICAL	YES	55.9	41.5	N.S.	73.9	60.0	N.S.
PROBLEMS	NO	44.1	58.5		26.1	40.0	
PEOPLE	YES	64.7	69.8	N.S.	52.9	52.6	N.S.
HELPING	NO	35.3	30.2		47.1	47.4	
DATE FOR	YES	52.9	56.6	N.S.	58.6	60.0	N.S.
LEAVING	NO	47.1	43.4		41.4	40.0	

*Self Reporting Questionnaire

TABLE 3

DISTRIBUTION OF PSYCHIATRIC DIAGNOSES
OF THE ARMERO DISASTER VICTIMS BY RESULTS
OF THE SRQ* AND BY DIFFERENT CRITERIA FOR CASENESS

DIAGNOSIS	CRITERIA FOR CASENESS**		
	BOTH	CLINICIAN	DSM-III
SRQ POSITIVES			
POST-TRAUMATIC STRESS DISORDER	33	51	35
MAJOR DEPRESSION	24	25	33
GENERALIZED ANXIETY DISORDER	2	15	2
ALCOHOL ABUSE OR DEPENDENCE	4	8	4
PHOBIAS	8	8	14
PSYCHOLOGICAL FACTORS COMPLICATING PHYSICAL ILLNESS	2	2	2
ATYPICAL BIPOLAR DISORDER	1	-	-
SOMATIZATION DISORDERS	-	4	1
PANIC DISORDER	1	2	1
ADJUSTMENT DISORDER	-	1	-
CONVERSION DISORDER	-	1	-
DISSOCIATIVE DISORDER	-	1	-
SENILE DEMENTIA	-	1	-
PERSONALITY DISORDER			
PARANOID	-	1	-
SCHIZOID	-	1	-
INADEQUATE	-	1	-
MENTAL RETARDATION, BORDERLINE	-	1	-
TOBACCO DEPENDENCE	-	1	-
SRQ NEGATIVES			
POST-TRAUMATIC STRESS DISORDERS	5	12	5
ADJUSTMENT DISORDERS	1	1	1
MAJOR DEPRESSION	3	3	3
GENERALIZED ANXIETY DISORDER	1	1	1
DISSOCIATIVE DISORDER	1	1	1
ALCOHOL ABUSE	1	1	1
PHOBIA	-	1	-

*Self-Reporting Questionnaire

**Both - the diagnosis given by the clinician was confirmed by DSM-III criteria (Criterion 1).
Clinician - the diagnosis by the clinician may or may not have been confirmed by DSM-III (Criterion 2).
DSM-III - the diagnosis met DSM-III criteria, but may or may not have been made by the clinician (Criterion 3).

TABLE 4

PERFORMANCE OF THE SRQ* COMPARED TO DIFFERENT CRITERIA FOR CASENESS OF THE ARMERO VICTIMS INTERVIEWED (N=104)

			CHARACTERISTICS OF THE SRQ		
CRITERIA FOR CASENESS	SRQ+ (n=70)	SRQ- (N=34)	SENSITIVITY	SPECIFICITY	POSITIVE PREDICTIVI VALUE
CRITERION 1: CLINICIAN'S DIAGNOSIS AND DSM-III DIAGNOSIS					
YES	53	8	.87	.60	.92
NO	17	26			
CRITERION 2: CLINICIAN'S DIAGNOSIS					
YES	64	14	.82	.77	.91
NO	6	20			
CRITERION 3: DSM-III DIAGNOSIS					
YES	57	8	.87	.67	.81
NO	13	26			

*Self-Reporting Questionnaire